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THE

HUNTERIAN ORATION,

DELIVERED AT THE

ROYAL COLLEGE OF SURGEONS,

ON THE 14TH FEBRUARY, 1857.

BY

THOMAS WORMALD,

FELLOW OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

LONDON:
JOHN CHURCHILL, NEW BURLINGTON STREET.
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THE

HUNTERIAN ORATION.

Mr. President,

I MIGHT fear to enter upon the duty which this day devolves upon me; but when I remember what it is to lay my votive offering at the feet of John Hunter,—in his name to do homage to the skill and wisdom of that profession of which we are all, in common, members,—no feeling but that of pride and gladness should possess me. My words may be weak and lifeless, but I rest upon the assurance that they fall upon the ears of men whose warmest sympathies the very name of Hunter will call forth.

Even if I can display no power which befits my office, this, Gentlemen, you, who, as myself, have employed the working hours of life in the dissecting room, in the pursuit of science, or in the daily routine of practice, will readily excuse.

The commemoration of this great man is the subject of the day; to that I will confine myself. No idea have I of adding to his renown; already the name of Hunter stands enrolled amongst those mighty ones whose minds have ruled the destinies or changed the thoughts of men ; no land in which his name is not known; but, here, in the very seat of Science, where the great intellects of this age and country (may I not add, without boasting, of the world itself ?) are incorporated, for the pursuit of all knowledge connected with our profession, *here* may we best learn the fame of Hunter.

Received into our society, he has become the living centre of it. Revered as a father of inductive science, the Founder of Modern Surgery, the chief promoter of anatomical, physiological, and pathological research, his mind yet gives direction and aim to all our efforts. "Being dead he speaketh."

No statue has been erected to him; his genius is his own imperishable monument: yet, as we look upon that bust by Flaxman, and then turn to the noble building which enshrines it—a building adorned, enriched, sanctified by the wonderful works of the Great Architect of the universe—we feel that the members of this college have raised a glorious testimony to his name and memory.

His fame is immortal; it is not for me to dwell on it: I would rather turn to his daily life, and endeavour to sketch forth those powers of mind and character which enabled him to break through the false trammels of his day and achieve the work he has done. This cannot but be of interest to all, especially to our younger brethren, now entering upon their career, filled with the same eager thirst for knowledge, the same desire to extend the bounds of science, and the same laudable ambition to create a name.

In the genius of Hunter, there was no marked peculiarity: he said of himself, that "he knew of no particular ability which he had beyond other men;" but there was a rare combination of power. His understanding was clear; his will determinate; his memory strong; his imagination vivid; his judgment sound and comprehensive. In his mind the perfection of our intellectual nature seemed restored; there was no confusion, no divided purpose: whatever was his pursuit, every faculty was engaged and brought to bear upon it. Hence the subtile quickness of his perception,—that strength of vision which enabled him to pierce through the outward forms of nature and detect her most secret workings.

This innate power of perception, and the self-dependence which springs from it, strikes us especially in Hunter. Whatever he undertook, wherever he might be placed, he applied himself simply to his work with the calm repose of a master mind. Brought up to London in his twentieth year from the seclusion of a Scotch village, uneducated, ignorant of the very elements of surgery, and introduced into the first professional society, he is at ease and unabashed.

An arm is given him for dissection—his success is complete. From that day his plan of life is settled. He devotes himself to the pursuit of surgical science. With the same fixedness of purpose with which he determines on his profession, he enters upon his course of study. Little versed in the dogmas of former ages, or in the philosophy of the schools, yet, as if the very mantle of Bacon had fallen upon him, he carried into surgery that inductive process by which such gigantic strides have been made in every department of physical science. No power of authority—no mere assumption of knowledge—could move him; to Nature alone he bowed, and from her he sought instruction.

Clear and penetrating as the intellect of Hunter was, it would never have raised him to the height of scientific excellence he reached, had it not been for his unflagging and persevering industry. We marvel at what he has accomplished, more especially, when we remember how much of his life had been lost to his profession. While my younger brethren may take courage from this fact, and proceed hopefully, whatever their past progress may have been, yet let them not forget the untiring devotion with which he toiled, when once he had entered upon his work. He lived for no other object. Hours of each day he was in the dissecting room; for he knew that the aberrations of disease would be best discovered by a thorough knowledge of the structure of the body, and of the healthy action of its various functions. Punctual and diligent in his practice, each case he made a study, yet would he complain bitterly of that poverty which compelled him to devote to it so much valuable time.

The whole night—far into the morning—was spent in the preparation of lectures, noting down cases, and the composition of his various papers: there was no pause in this man's labours. From the first spring of life to his last age, Hunter was the same — a devotee to Science, an unwearied interpreter of Nature's mysteries.

Another point we remark in his character, is, the extent of his research, the enlarged and comprehensive view he took of Nature and her ways.

He suffered no mere names or theories to influence him; even his own deductions he despised until he had time to verify them. Seeing his pupils, on one occasion, writing down his lectures, "Trouble not yourselves to write," he said; "in twelve months we may find all to be wrong."

Thoroughly estimating that ancient saying, "Man is but a searcher after truth," he drew no inference, built upon no fact, which was not the result of actual experiment. He applied not to books where the discoveries of former labourers were detailed, but appealed directly to Nature herself. For ten years he employed himself in the dissection of the human frame. Thirsting for knowledge, and unable to solve the many problems which presented themselves, he determined to extend his researches throughout the whole vegetable and animal economy, and see if Nature, in her simpler guise, might not more distinctly reveal herself. He then entered upon the study of comparative anatomy, examining, with the most minute attention, the habits, the formations, and the various structures of plants and animals. At home or abroad, never, for one moment, were his thoughts at rest. Labouring himself, searching for information, seeking help in every direction, nothing could escape his observation.

His mind was the exponent of the science of the day; gave direction to the efforts of others; received their daily contributions; worked them out to their results; and returned them again, to their authors or to the world, enriched a hundredfold.

Here, then, Gentlemen, is the secret of the profound knowledge of this great man: his extended and continual observation, his research into Nature's apparently most trivial and despised operations, and that habit of deductive reasoning which made him always either gathering or storing up truth from every fact which came before him.

The results of his labour remain with us; some have perished, and a sigh escapes me at the remembrance. Yet, in the various papers which have been collected, we have the fruitage of that rich and fertile mind. Now, too, we discover the effects of his first waste of life; he could never overcome his early neglect of literature. With the clearest understanding, the most extended knowledge, in many parts of his writings he is obscure and involved; to those, however, who seek for instruction, rather than for beauty of diction or expression, his works will be full of interest.

The most cursory glance at his writings will show, not only his intellectual power, but his modesty and love of truth. You will find no assumptions, no preconceived theories, but a simple relation of experiment and fact, a clear and evident deduction; or, where some point of inquiry cannot be met, a ready confession of ignorance; while in every page lie scattered the richest germs of scientific discovery, without any other mark of distinction than their own internal fulness. Accustomed to dwell in the haunts of Nature, and to her daily converse, even when he had given utterance to some deep mystery, he knew not that he had declared her secrets, nor the importance of the revelation he had made.

This self-forgetfulness has deprived him of much of the posthumous praise which really is his due. For instance: several very able and elaborate treatises have been written on the presence of pus in the blood. In these the subject is treated as if it were entirely the result of modern discovery; but, in his paper on the inflammation of the internal coats of veins, we find that Hunter seems to have been familiar with the various phenomena attendant on phlebitis, pyemia, and their consequences, except that what he probably considered to be pus in the interior of the coagula, has been demonstrated to be chiefly softened fibrine.

A few extracts from this essay will suffice. He commences: "The inside of veins is a seat of inflammation and abscess. I have found in all violent inflammations of the cellular membranes, whether spontaneous or in consequence of accident, that the coats of the larger veins passing through the inflamed part become also considerably inflamed, and take on the adhesive, suppurative, and ulcerative inflammations; but it is so common a case, that I have hardly ever seen an instance of suppuration, in any part furnished with large veins, where these appearances are not evident after death." Again: "I am inclined to believe that the exposure of cavities of the larger veins, in cases of accidents, and also of operations, is often the cause of many of the very extensive inflammations which sometimes attend these cases; and, indeed, may be the reason why inflammations extend or spread at all beyond the sphere of continued sympathy." Further: "In all cases of inflammation, these adhesions arise from an extravasation of coagulable lymph; but how such adhesions should take place on the internal surface of veins, appears, at first sight, difficult to conceive, since it is most obvious that the coagulable lymph thrown out by the exhalants on the internal surface of the vein, mixing with the same fluid circulating with the other part of the blood, would be swept away without producing any effect. But since the adhesions do, in fact, happen, the *coagulable lymph must undergo some change* connected with the disposition which produces its extravasation."

The great pathologist, in fact, first recognised and described inflammation of the veins, and indicated the effects produced by the introduction of pus into the system, as, also, the relation between phlebitis and inflammation of distant parts. The final sentence of this paragraph, though somewhat wanting in clearness, embodies more than a suggestive hint. In addition to the fundamental points mentioned, he had evidently arrived at this further and striking conclusion—that some change in the coagulable lymph was super-induced. This assertion, Mr. Gulliver, by his experimental and microscopical investigations, has happily confirmed. All will readily admit the value of his researches, and how great are the accessions he has made to our pathological knowledge; at the same time, we must not, in justice, forget the fact, that the elemental data on which his observations were founded had been already noted down by Hunter.

There is another striking fact, connected with the important surgical operation adopted for the cure of aneurism, which I would lay before you somewhat in detail. This, so far as I am aware, has been strangely overlooked, or, at least, not directly assigned to Hunter, with whom the improved method of operating undoubtedly originated. The modern process, which has of late been extensively adopted by the most distinguished surgeons in Dublin and elsewhere, consists in mechanically obstructing the full impetus of the blood, and, by its coagulation, arresting the progress of the disease: thus the powers of nature have an opportunity of restoring the parts affected to a sound and healthy state. No mode of treatment could be more simple; consequently, it has, in a great measure, superseded the Hunterian.

But Hunter had already explained the very principle on which it rests, and has even carried it into practice, as the following case will prove. In a paper in the "Medical Transactions," by his brother-in-law, the late Sir Everard Home, who mentions that Hunter's engagements prevented him writing for the Society the details connected with his new method of operating in this disease, we find this deduction from the first case:—"The conclusion to be drawn from the above account is a very important one—viz., *that simply taking off the force of the circulation from the aneurismal artery is sufficient to effect a cure of the disease*, or, at least, to put a stop to its progress, and leave the parts in a situation from which the actions of the animal economy are capable of restoring them to a natural state." He adds—"In confirmation of the cure of aneurism depending on taking off the force of the circulation, I shall mention a case of aneurism that recovered without an operation, and in which the mode of recovery depended upon the same principle.

"The aneurism was in the femoral artery, and the swelling appeared upon the anterior part of the thigh, a little above the middle, extending upwards nearly to Poupart's ligament. An attempt was made, by compressing the artery above the tumour by means of an instrument somewhat resembling a steel truss, to give the blood in the sac a chance of coagulating, and by that means to put a stop to the progress of the disease; but, from the pain which it occasioned, every attempt to make a permanent compression of the artery proved ineffectual. The tumour increased to a considerable size, a great degree of inflammation and swelling took place in the sac and common integuments, and mortification appeared to be coming on in the skin. While in this state, no pulsation could be felt in the tumour, or the artery immediately above it; so that the steps preceding mortification had taken place, which put a stop to the dilatation of the sac and all its consequences. From the time the pulsation in the sac stopped, the inflammation and swelling subsided, though very slowly; and as the tumour diminished, it became firm and solid, and the patient got perfectly well."

The truth is, the germ of the so-called modern discovery is to be traced in the principle of the Hunterian operation, even if the decisive statements just quoted had never been made.

The discovery and development of a great principle is one thing, the carrying out and perfecting its mechanical appliances another.

We must not withhold due praise from those gentlemen, who, by their skill and thoughtful observation, have reduced this once difficult operation to its present simple form. At the same time, the genius of that man who first traced out the processes which Nature herself adopts for the cure of the disease must never be forgotten.

While upon this subject, permit me to relate to you the particulars of a case which came under my own observation:—A coachman, who was driving his master when the aneurism first presented itself in the ham, was operated upon by Hunter, at St. George's Hospital. In Sir Everard Home's report it is distinctly said, that the nerve was not included in the ligature; and the numbness of the limb immediately following the operation is recorded as singular. The poor fellow was attacked with severe remittent fever; but was discharged from the hospital, cured of his aneurism, though in a feeble condition, at the end of the fourteenth week. This was the fourth time that Hunter had practised his new method of treatment. Many years after, at the patient's death, I obtained the limb from his widow. Sir Everard Home mentions that this was the first case in which the vein was *not* also tied. On dissection, I found the femoral vein pervious, and in a normal condition, whilst the numbness of the limb was accounted for by the discovery that the nervus saphenus had been divided or included in the ligature. This was evident from its ganglionic state directly under the cicatrix.

As an opportunity of forming a preparation from a case treated by Hunter must of necessity be extremely rare, every circumstance connected with it will be a matter of interest. The ligature had been applied to the artery just before it passed beneath the sartorius, and it was obliterated from the profunda to the anterior tibial. The arteries generally were loaded with calcareous deposit, to an extent which rendered their injection extremely difficult, whilst the tortuous anastomosing vessels, which had carried on the circulation, were, comparatively, in their normal state. Another fact worthy of notice is, the aneurism was represented by a small calcareous tumour about the size of a filbert. Such are the leading features of a case, singularly interesting, not perhaps so much in itself as in its immediate connexion with a man who, independently of his genius, must be ranked as the most diligent, energetic, and successful pioneer, in all subjects connected with surgical science, that ever adorned our profession. In the year 1787 the operation was performed; the patient was then 36; he died in the year 1837. His health must indeed have been perfectly restored; he lived for half a century afterwards, to the advanced age of 86. A point is here established which might otherwise be questionable — the operation for popliteal aneurism does not necessarily shorten the duration of life.

Before leaving this case, I cannot forbear mentioning a kind act connected with it, which was told me with much emotion by the widow of the man. On leaving the hospital he was in a most weak and helpless state; change of air was absolutely necessary. Hunter was always poor,—his museum robbed him of every guinea he could earn,—yet he sent his patient into the country, and supplied him with the means of living there till his health was completely re-established. This little incident may show the true sympathy and benevolence of his character, and how little he suffered his own wants, pressing as they might be, to interfere with the kind charities of his daily life.

I have dwelt upon these two cases, for they are not slight evidences of Hunter's penetrating genius, and may serve to show the value of those facts and observations which are to be found throughout his various papers.

But I would not rest his fame solely on his writings. They are but the records and illustrations of a greater work, that to which he devoted the thoughts and labours of his whole life—his Museum. Here he has left an enduring testimony to the extent to which he carried his research—his deep insight into the laws of structure and of the economy, and his habit of accurate comparison and generalisation. A life only like his, of systematic industry and of entire devotion to one object, could have brought such a work to its completion.

Such, Mr. President, was the man whose birth we celebrate. Cherishing his memory as I do, it seemed to me that this day would be best held in commemoration by dwelling briefly on his habits of mind and character, and showing, from his example, how professional skill is to be acquired—a name and reputation gained amongst men.

Most nobly has his great work been fostered; the Council of this College have shown their appreciation of his labours in the large sums which they have devoted to the Museum—above £65,000 during the last ten years—and in their care to elect men of such intellectual power as fitted them for the course of scientific investigation they were to carry on—men who, instead of receiving, have reflected honour on the office they filled. Preeminent amongst them is our late Hunterian Professor, RICHARD OWEN.

The life of one man was too short for the collection and arrangement of such a museum as this. Hunter gathered the material; the apparatus for rendering it practically useful was confessedly imperfect. For the removal of this defect we owe much to the labours of our late Professor.

The catalogues and other scientific works he has written, are so numerous, that our time will not permit me even to give their titles. But any tribute from me is unnecessary; the judgment recorded by the Council of this College, which we find in the preface to the fifth volume of the "Physiological Catalogue," seconded, as it is, by the united acclamations of the whole world of science, would make all private eulogy appear presumptuous.

After a devoted service of many years, he has gone from us, restamping our noble collection with his own high authority in the graceful acknowledgment he has made of the great advantages he has derived from it—advantages of which he has so signally and so thoroughly availed himself. Upon the commencement of his career at the British Museum, from whence we may expect his talent and profound research will produce yet further fruits, I could not omit this opportunity of reverting to his former labours.

Though we have lost the aid of this great man, yet, in his successor, Mr. Quekett, we have full reason to believe that his place will be ably filled. The earnest devotion with which he has given himself to scientific inquiry—not, I grieve to say, without a sacrifice of health—the readiness with which he imparts the result of his own incessant thought to all who come to him for information—his honesty, his kindness and gentle courtesy—all show that, in the choice of our Professor, we have fixed on one who will promote to the utmost the interests of this College.

Already he has entered on many fresh subjects of investigation. The microscopic section of the museum, for the extension of which we are indebted to him, has been pronounced, by those competent to judge, the most valuable and perfect of its class in Europe. The whole rearrangement of the collection, a work of the greatest difficulty, is just concluded. The systematic plan of Hunter is now, for the first time, fully brought to view.

The following sketch will exhibit its beauty and simplicity:—On entering the western museum, commencing from the wall-cases on the left, skeletons of the invertebrata are arranged in the following order—1st, plants; 2nd, sponges; 3rd, zoophytes; 4th, echinoderms; 5th, mollusca; 6th, articulata. In the small museum, the several divisions of the vegetable and animal kingdoms displayed in the former room are represented in the same order by a magnificent series of Hunterian fossils. In the new or eastern museum, passing round it from the left, is a well-classified collection of the four great divisions of the vertebrate kingdom—fishes, reptiles, birds, mammals. We are now brought again into the middle room: here the four great classes of the vertebrata are represented by the fossils of a former period. On re-entering the western museum, we see the highest member of the vertebrate class—man. The specimens are thus arranged: skeletons of man;

crania of man; skeletons, and parts of skeletons, exhibiting the effects of accident or disease; man, or parts of man, in abnormal or monstrous condition; vascular preparations; mummies.

The floors of the three museums are occupied by the larger casts and skeletons, and table-cases for minute structure or detached parts.

By this arrangement, many thousand specimens, which before were not exhibited, have been brought to light; and the collection, various as at first sight it may appear, is formed into one connected whole.

Our library, the nucleus of which was formed by Hunter, is in the most efficient order. It now contains about 50,000 volumes and tracts, duly catalogued and arranged. Under certain regulations, it is open and accessible to all.

Sir, we all must despise mere empty eulogy or indiscriminate praise; but on this day, when we keep a twofold commemoration — one to the memory of Hunter, the other to the completion of that work to which he devoted his genius and his life—the names of those could not be omitted who have so fully carried out the noble aspirations of the Council, and enabled this College to hold its present high and commanding position. The withering hand of time has not left untouched kindred institutions. Glorious and full of majesty as they appear, the power and freedom of their first days have departed; but to us youth seems perpetual. Years have passed over us, and, while they have added to our strength, yet have they not taken with them the fresh energy of life, that elasticity of thought and action, by which we press onwards with the advancing science of the day. And to what do I attribute this, but to that freedom of our profession, in which I glory—a freedom which stamps with its own living character every institution connected with it, and especially this College, which is its heart and centre. With us no man is an alien,—no power of clique or patronage can bar the door of entrance, and keep out the poor and forgotten child of genius. Let but the man of talent come forth, let him but work hopefully amidst the press of men, which must for a time obstruct his progress, and he shall be known, his reputation shall be secure; nor shall he fail in obtaining a full portion of that competence and ease which should be the reward of every man who unites talent with his labour.

If the interval elapsing between these commemorations leaves us no record of any signal discovery in surgery, yet it is never unmarked by one event—the removal from amongst us of some distinguished member of our profession. If time permitted, I might refer to several; but there is one whose name I must mention—Guthrie. His death no one can have heard of without feeling that a mind stored with knowledge has departed, and that the cunning hand of the skilful has been taken from us. Of an iron constitution, and persistent energy of mind and body, he availed himself to the utmost of that extensive field for observation and practice which the Peninsular war placed at his disposal. The skill which he thus acquired he kept in continual exercise; while the facility with which, to the latest period of his life, he gained fresh information, was truly marvellous.

His works, especially his "Observations on the Diseases and Injuries of Arteries," and his "Commentaries on the Surgery of the War," fully sustain his reputation and show how much we owe him. Three times he was elected to our presidential chair. In him we have to deplore the loss of the most illustrious military surgeon this country ever produced, and of a man, whose time, influence, and talents were always given to promote what he believed to be our common interests.

In connexion with his name, let us for one moment recall the memories of those members of our profession, who, following in his steps, now lie sleeping on the battle-field, their labours done.

We have passed, Sir, through a fearful struggle; once more the two great families of the earth have met, and, with a frightful sacrifice of life, the irruption of the barbarian on the fairest lands of Europe and of Asia has been repelled. All honour let us pay to those brave men, who, leaving home and country, first landed on those far-off shores, prepared for every extremity—victory or death!

In close array they lie on the field they fought. All honour to those who, still fearless amidst unheard-of sufferings, went forth to carry on the deadly strife! their deeds, their victories, their names, can never perish.

But there are others, forgotten as they have been by the world, whom we at least will speak of; men, who with no inducement, no hope of fortune, advancement, or renown, were ready to devote their skill and lives to the service of their country—the military surgeons. They lay no claim to heroism, yet always are they seen at the post of honour—on the rampart, in the open trench, at the head of the division, or with the secret ambuscade, waiting for the moment when their help may be required. To others there is a time of rest—a period when danger ceases—but theirs is a continual conflict.

The battle calls them to the front to bind up the shattered limbs, or stay the faint pulsation of the ebbing life. The morning of the victory finds them still unwearied, labouring with firm and steady hand amidst the dead and dying. The close of warfare but sends them to the hospital or tent—to the contagion of fever and disease. Such is their work. Surely their deeds should not be forgotten!

Gentlemen, I have lingered over the memories of those who have laboured in our profession, for it seemed most fitting that on this day their names should be held in remembrance. John Hunter

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first led us to the feet of Nature, for he had learned that from her lips we best gain knowledge. Those who have followed him have pursued his questionings, and have disclosed to us those hidden things which she reveals to her true votaries. No longer can it be said, *nulla ars inconstantior Medicinâ, nec sœpius mutatur.* In her we have found a true teacher, and a certain guide. We know our work—to assist Nature in her operations ; our true position—her ministering servants. We have learned to look upon the human frame with reverence, and that the skill of the surgeon is to save, not to destroy its members. Through these men has the science of surgery made such wondrous progress: once iron-bound with the deadening influences of authority and custom, it seemed but as a bare and sapless trunk; but now, freed from its destroying bonds, it has sprung forth, and spreads wide its branches, clustered with fair fruits and flowers—a tree of life and knowledge.

By such labours have we been raised to our true position. The skill of the physician is held in reputation, for his knowledge is real. Most glorious is the work which has been achieved. May we not hope that men of like genius may never be wanting to carry it onwards to perfection!

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